

**SE Asia : Regional Cooperation Program**



In the last decade, PSP has been a growing concern in SE Asian region. In cooperation with the Philippine Nuclear Research Institute the following initiatives were identified:

- Develop capability for the PSP receptor binding assay, and field test method.
- Conduct regional technical training workshops.
- Develop local capability to purify and radiolabel saxitoxin.

**SW Africa: Nuclear Techniques to Address HAB Impacts in the Benguela Region**

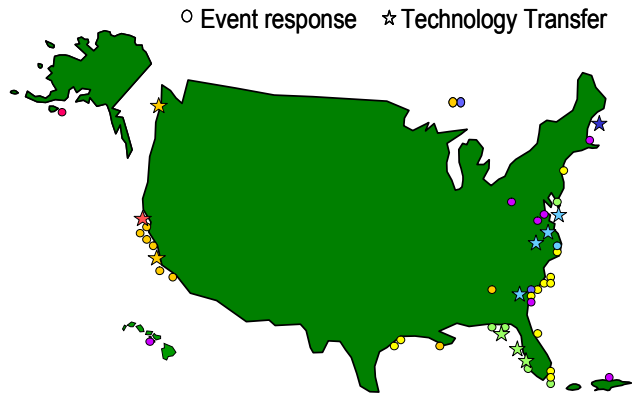


Marine faunal mass mortality events and human fatalities have been well-documented in the Benguela Region of SW Africa. In cooperation with the International

Atomic Energy Agency the following initiatives have been developed:

- Transfer receptor binding assay (RBA) technology and related assays for algal toxins, and establish the capability to perform these assays in laboratories of Member States.
- Implement RBA and related assays for HAB toxins in national monitoring programs and create a shared database among Member States.

● DSP ● ASP ● PSP ● Pfiesteria ● NSP ● CFP ● Other



**California Department of Health Services**



Technology for conducting a rapid, cost-effective receptor binding assay for PSP toxins was provided to the California Department of Health Services (CDHS) through training sessions at the Charleston laboratory. This technology shows a very high potential for replacing the currently employed mouse bioassay, which has drawn increasing criticism due to its use of live animal testing and laboratory maintenance of mouse colonies. Field trials comparing the receptor assay with the mouse bioassay, in collaboration with the CDHS and Maine Department of Marine Resources toxin monitoring programs will promote the receptor assay as an alternative to the mouse bioassay in providing a more efficient means of toxin testing and assuring the safety of seafood consumers.

**Technology Transfer and Training Provided at Workshops Worldwide**



Receptor assays have been demonstrated in workshops held in Europe, Asia, and shown here at the Philippine Nuclear Research Institute.

**Technology Transfer With Russia Funded by U.S. Civilian Research Development Foundation**



Dr. Alexander Vershinin of the P.P. Shirshov Institute of Oceanology was funded by the U.S. Civilian Research Development Foundation to "Identify and Characterize Toxic Algae in Russian European Waters". This

joint proposal with the Marine Biotoxins Program allowed Dr. Vershinin to work with scientists in Charleston on the following methodologies:

- Phytoplankton taxonomy
- Toxic phytoplankton culture
- Detection methods for DSP and ASP toxins

This exchange was followed by Marine Biotoxins scientists visiting aquaculture sites on the Black Sea and the identification of the DSP producing *Prorocentrum lima* in this region.

## Why Technology Transfer ?



The Technology Transfer Unit of the NOAA Marine Biotoxins Program was initiated in response to our partners seeking assistance in the detection and identification of marine biotoxins and harmful algae.

### Partners

- U.S. federal and state agencies
- Academic institutions
- Non-governmental organizations
- International organizations

### Products

- Rapid, high throughput *in vitro* assays
- Identification and culture of harmful algae

### Transfer of Applications

- Workshops
- Personnel exchanges
- Research collaborations



Our partners become aware of these capabilities through requests for scientific guidance, research collaborations, demonstrations at scientific meetings, and the published literature. Through these efforts we enable our partners to better understand and manage both public and ecosystem health issues related to harmful algae and their toxins.

## 2002 NOAA Technology Transfer Award



The NOAA Technology Transfer award recognizes exemplary activities that promote the domestic transfer of science and technology development within the Federal Government and result in the utilization of such science and technology by American industry or business, universities, State or local governments, and other non-Federal parties. The 2002 recipients, Drs. Frances Van Dolah and Gregory Doucette, developed microplate receptor technology at the CCEHBR lab in Charleston, S.C. In response to a national consensus, extensive technology transfer and training opportunities were provided to state agencies responsible for monitoring harmful algal blooms.

**For assistance regarding technology applications or other related questions please contact:**

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## Marine Biotoxins Program Technology Transfer



**Providing hands-on training and technology transfer of new methodologies for the detection of harmful algae and their toxins to research and regulatory programs worldwide.**

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